REMARKS

In response to an objection, claims 8 and 10 are amended to correct typographical errors. It is requested that the objection be withdrawn.

Claim Rejection based upon Webber et al. and Rohrle

Claims 1-3, 5 and 9 were rejected under 35 U.S.C. § 103 as unpatentable over United States Patent No. 6,648,260, issued to Webber et al. in 2003, in view of United States Patent No. 6,216,972, issued to Rohrle in 2001.

Webber et al. is discussed in the present application at paragraphs 0002 and 0033. The retractor in Webber et al. is characterized by 2 torsion bars adapted for applying either a high load limit or a low load limit to the belt. The high load torsion bar is normally coupled to the take-up spool for the belt. Depending upon circumstances, during an impact event, the load applied to the belt may be switched to a low load torsion bar. Webber et al. describes a switching mechanism for this purpose. Fig. 6 in the present application shows retractor load during a sled test in which the load is switched from the high load torsion bar at Point A to the low load torsion bar at Point B. As can be seen, the load dips dramatically during the switching period. Although the dip only lasts for 16 milliseconds, it occurs during a critical period of the impact and results in belt displacement of 170 mm. In accordance with the present invention, a mechanism is provided that applies an auxiliary load when the load is switched from the high load torsion bar to the low load torsion bar. The results are shown in Fig. 9. When the retractor is switched from the high load at Point A to the low load at Point B, the dip in the load is eliminated, and the belt displacement is reduced to 100 mm. Thus, the present invention

provides a significant and patentable improvement over the mechanism in Webber et al.

The rejection points to Rohrle. Referring to Fig. 4, Rohrle describes a belt retractor that has only a single torsion bar 102, col. 3, lines 66-67. It does not relate to switching from a first torsion bar to a second torsion bar. Torsion bar 102 acts in conjunction with a force limitation device, shown in Fig. 1, which comprises a spring steel band 22 held in a duct 20 and connected to the torsion bar by a carrier 40. The resulting force profile is shown in Fig. 6. During the initial phase, the retractor ramps to a high load, whereas after the band is played out, the torsion bar provides a lower load. There is nothing to indicate that the mechanism mitigates the drop off from a high load level to a low load level, so as to allow transition without a dip in the applied load. Thus, Rohrle does not teach or suggest Applicant's invention.

Claim 1 is directed to Applicant's belt retractor that includes a first torsion bar, a second torsion bar and a switching mechanism. The first torsion bar applies a high level load limit, and the second torsion bar provides a low level load limit. The claim further calls for an auxiliary load limit mechanism that supplements the load when switching from the high level load limit to the low level load limit. Webber et al. does not suggest an auxiliary mechanism to supplement the load limit during the switching period. Rohrle has only a single torsion bar, and so does not need or show a switching mechanism, and so cannot point to an auxiliary mechanism to supplement the load when switching torsion bars. Further, in Rohrle, the torsion bar and the band cooperate to achieve an increased load. Nothing in Rohrle would suggest a mechanism to prevent a drop off in load when switching form a high load to the low load. Thus, even if combined, the references do not point to Applicant's belt retractor in claim 1.

Claims 2-3 and 5 are dependent upon claim 1 and so not taught or suggested by the

references at least for the reasons set forth with regard to that claim.

Claim 9 is directed to Applicant's belt retractor and calls for first means to provide a high load level limit when the take-up spool is locked, second means to provide a low level load limit, a switching mechanism to switch from the high level load limit to the low level load limit, and an auxiliary load limit mechanism. As discussed above, Webber et al. and Rohrle do not suggest an auxiliary load mechanism to supplement load when switching from a high level load limit to a low level load limit. Thus, the references do not show Applicant's invention set forth in claim 9.

Accordingly, it is respectfully requested that the rejection of the claims based upon Webber et al. and Rohrle be reconsidered and withdrawn, and that the claims be allowed.

Claim Rejection based upon Webber et al. and Rohrle

Claims 4, 6-8 and 10-12 were rejected under 35 U.S.C. § 103 as unpatentable over Webber et al. and Rohrle, in view of United States Patent No. 4,323,205, issued to Tsuge et al. in 1982.

Claim 4 and 6-8 are dependent upon claim 1; whereas claims 10-12 are dependent upon claim 9. For the reasons set forth above, Webber et al. and Rohrle do not show a mechanism for supplementing the load limit when switching from a high load torsion bar to a low load torsion bar, and so do not point to Applicant's invention in claims 1 or 9.

Tsuge et al. is applied to show a wire having a circular cross section as a load limiting member in a belt retractor. However, the belt retractor in Tsuge et al. does not include a torsion

bar. Thus, Tsuge et al. does not suggest a mechanism for switching between high load and low load torsion bars, or for supplementing the load limit during the switching. Without these, Tsuge et al. does not make up the shortcomings of Webber et al. and Rohrle so as to lead the practitioner to Applicant's invention.

Claim 1 calls for a belt retractor that switches from a first torsion bar with a high level load limit to a second torsion bar with a low level load limit. Only Webber et al. of the applied references has two torsion bars and a switching mechanism. However, as shown in Fig. 6 of this application, the switching mechanism in Webber et al. results in a dip in load during switching from the high load to the low load. Rohrle has a single torsion bar and uses a band to increase the maximum load limit. Tsuge et al. applies the load by a metal wire without a torsion bar. Thus, even when combined, there is nothing in Rohrle or Tsuge et al. to suggest supplementing the load when switching from a high load torsion bar to a low load torsion bar. Without this, the references do not lead to Applicant's invention in claim 1, or dependent claims 4 and 6-8.

Claim 9 is directed to Applicant's belt retractor that includes first means to provide a high load level limit, second means to provide a low level load limit, a switching mechanism to switch from the high level load limit to the low level load limit, and an auxiliary load limit mechanism. None of the references contemplate to supplement the load level when switching form a high level load limit to a low level load limit. Thus, the references do not teach or suggest Applicant's belt retractor in claim 9, or dependent claims 10-12.

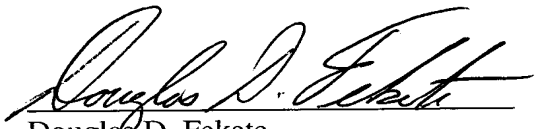
Accordingly, it is respectfully requested that the rejection of the claims based upon Webber et al., Rohrle and Tsuge et al. be reconsidered and withdrawn, and that the claims be allowed.

Conclusion

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance. If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



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